

**LH447** (*beech-wood honey*) is a viscous syrup, extracted from beech-wood, produced exclusively by bene pharmaChem. It's made solely of plant material by a defined manufacturing process without chemical modification.

Main components are hemicelluloses and lignin. Chemically it's a glucuronoxylan-lignin complex. Inherent complexes like carbohydrate-lignin have shown

- *cholesterol lowering,*
- *anti-inflammatory,*
- *antibiotic,*
- *antiviral, and*
- *antimutagen*

activities. No oral toxic characteristics were detected.

Above specified properties were proven by the University of Jena and the Academy of Science Bratislava. Janda (6) concluded:

*“... It could be shown that this extract of beech wood shows a high potential to serve as a dietary supplement with pharmaceutical properties ...”*

The marketing of oligomer carbohydrate-lignin complexes and their application as cholesterol-binding additive for pharmacological and nutritional preparation has been patented by bene pharmaChem.

## The rationale behind

### ① **cholesterol binding activities**

LH447 has been proven to show high cholesterol binding capacities. Soluble fibers bind bile acids and cholesterol during the intraluminal formation of micelles (1). The resulting reduction in the cholesterol content of liver cells leads to an up-regulation of the LDL receptors and thus increased clearance of LDL cholesterol. Other mechanisms include inhibition of hepatic fatty acid synthesis by products of fermentation (2) and changes in intestinal motility (3-5).

### ② **anti-inflammatory activities**

The results of phagocyte and enzyme tests (macrophage stimulation, xanthin-oxidase inhibition, inflammatory biomarkers) showed anti-inflammatory properties.

### ③ **antibiotic activities**

Minimal inhibition concentrations of bacteria, yeast cells and fungal strains (*s. aureus*, *e. coli*, *e. faecalis*, *m. vaccae*, and *c. albicans*) were determined, showing antibiotic properties.

### ④ **antiviral activities**

Antiviral efficacy was successfully tested against herpes simplex Virus (HSV1).

### ⑤ **antimutagen activities**

Already low concentrations of LH447 inhibited effective acridine orange (AO) and ofloxacin (OFL) induced mutagenicity in *e. gracilis* assay.

*Coronary artery disease is the major cause of death in United States and Western countries*

- *Blood cholesterol is a major risk factor*
- *Dietary and pharmacological reduction in total and LDL cholesterol decreases the risk of coronary events*
- ***Beech-wood honey provides a safe and natural complementary way to cope with it and more***

